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SEP 16 2003

TC 1700

This listing of the claims will replace all prior versions, and listings of claims in the application.

In the Claims

Claim 1 (Currently Amended) A composite wrap material for wrapping reams of paper, the wrap material consisting [essentially] of:

a first layer of paper having a basis weight of about 20-60 lbs/3,000 sq. ft;

a second layer of a solid polymer film material; said polymer film being solid during lamination to said paper; and

an adhesive layer between the first and second layers.

Claim 2 (Cancelled)

Claim 3 (Cancelled)

Claim 4 (Cancelled)

Claim 5 (original) The composite wrap material according to claim 1, wherein the first layer is composed of a material selected from the group consisting of machine finished paper, machine glazed paper, tissue, air laid fabric, wet laid fabric, creped tissue, and a metallized paper.

Claim 6 (Previously Amended) The composite wrap material according to claim 1, wherein the second layer is selected from the group consisting of polyethylene, polypropylene and polyester.

Claim 7 (Cancelled)

Claim 8 (Currently Amended) The composite wrap material according to Claim 1, wherein the adhesive is composed of a polymer material selected from the group consisting of polyethylene, polypropylene, polyvinylidene chloride, polyethylene

[acrdylic] acrylic acid, polyester, polyisobutylene, [nylone] nylon, polymethylpentene, and ethylene vinyl acetate, and copolymers thereof.

Claim 9 (Original) The composite wrap material according to claim 1, wherein the adhesive layer is composed of a wax/polymer blend.

Claim 10 (Original) The composite wrap material according to Claim 1, wherein the adhesive layer is composed of a hot-melt adhesive.

Claim 11 (Original) The composite wrap material according to Claim 1, wherein one or more of the layers are pigmented.

Claim 12 (Previously Amended) The composite wrap material according to Claim 1, wherein a surface of the first or second layer is composed of a metallized material.

Claim 13 (Cancelled)

Claim 14 (Cancelled)

Claim 15 (Cancelled)

Claim 16 (Cancelled)

Claim 17 (Cancelled)

Claim 18 (Cancelled)

Claim 19 (Cancelled)

Claim 20 (Cancelled)

Claim 21 (Cancelled)

The Examiner has objected to Claim 8 because "acrlyic" and "nylone" are misspelled. Applicant has amended the claims accordingly. Applicant has amended claim 1.

The Examiner has rejected claims 1, 5, 6, 10 and 12 as being anticipated by Lacy (USPN 3,480,464). Lacy teaches a wrapping or packaging material comprising an extrusion coated paper wherein the polyolefin layer is extruded onto a paper substrate and then a thin layer of metal is vapor deposited on the polyolefin layer (Abstract; Col. 4, lines 10-55.) Lacy teaches that the any type of paper and paper thickness can be employed as the substrate such as processed papers like Kraft paper and that the polyolefin layer is preferably polyethylene (Col. 3, lines 3-72.) Lacy teaches that the paper, polyolefin or metal layer can be provided with beneficial adhesion promoting agents such as a coating layer of PEI (Col. 4, line 64-Col. 5, line 9.) Lacy further teaches examples comprising a paper having a basis weight within the instantly claimed range, a polyethylene extruded layer on the paper having a PEI adhesion promoting layer on the surface and metallizing the polyethylene layer (Examples.)

With respect to Lacy, the Examiner stated that Applicant argues that the instant invention does not require a metal layer, is formed from a solid polyolefin film and has heavier paper weights than Lacy; however, the Examiner notes that the instant invention does not exclude a metal layer given that it is drafted in "consisting essentially of" transition language and there is nothing on record to indicate that a metal layer would materially affect the basic and novel characteristics of the invention.

Applicant has amended the claims so that the consisting essentially of language has been changed to consisting of language, therefore, the claims of the present invention are not anticipated nor obvious over Lacy.

The object of Lacy is to create a lighter weight, flexible metallic laminate structure, akin to aluminum foil. (Bezgian Third Declaration Para 2). Therefore the metallic laminate structure is essential to the structure of Lacy. Therefore, Amended claim 1 and the dependent claims are not anticipated nor obvious over Lacy.

With respect to Applicant's arguments regarding the claim limitation "said polymer film being solid during lamination to said paper", the Examiner notes that it is well established that product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. Therefore, given that the second layer of the instant invention is a solid polymer film in the final product whether solid during lamination to the paper via an adhesive layer or extrusion laminated to the paper via an adhesive layer, the Examiner takes the position that the invention taught by Lacy reads upon the instantly claimed invention given that the final product of Lacy appears to be the same as the final product of the instant invention particularly given that the instant disclosure utilizes extrusion of the adhesive layer which would result in the same interfacial properties.

The claims of the present invention require that the second layer be a solid polymer film material; the polymer film being solid during lamination to the paper. This is important to the final structure of the product. Lacy uses a liquid polymer which it coats the base paper then solidifies the liquid polymer, then deposits a metal layer and then a final polymer layer. The structure of Lacy is then relatively easy to heat seal.

(Bezigan Third Declaration Para 4). A solid polymer film does not interact with the liquid adhesive in a way to commingle with any of the other layers.

Applicant submits the Declaration of Louann Mueller. Ms. Mueller received a BBA in Business Administration and Paper Science from Western Michigan University in 1984. (LM Declaration Paragraph 1). From 1987-97, Ms. Mueller worked for James River Corporation as Quality Manager. Her responsibilities included product development in extrusion coating products for the food industry. (LM Declaration Paragraph 2). From 1997 to present Ms. Mueller has worked for Coating Excellence International as a technical manager. Her responsibilities included product development for extrusion coating products for industrial applications, including ream wraps. (LM Declaration Paragraph 3).

During her entire career, Ms. Mueller has encountered and worked with ream wrap products. (LM Declaration Paragraph 4). Ms. Mueller has been a member of the Technical Association for the Pulp and Paper Industry (TAPPI) since 1990. (LM Declaration Paragraph 5). Ms. Mueller has reviewed the present invention and compared it to the prior art using a composite construction involving paper commingled with one or two layers of melted poly film. (LM Declaration Paragraph 6).

It is the opinion of Ms. Mueller which is borne out of the test results set forth in the Declaration, that the present invention, comprising a paper/ liquid poly/ solid poly film composite structure, has greater strength than the prior art comprising commingled paper/poly construction and that the present invention differs significantly from the prior art in these respects. (LM Declaration Paragraph 7).

The test results show that the present invention, the Sharkskin Ream Wrapper with 40# BL/ 10# LDPE/ 70 gauge film is stronger than and different from the prior art, namely a 40# BL/ 10# LDPE/ 7# LDPE. (LM Declaration Paragraph 8).

The ream wrap of the present invention had a burst strength of 62 psi and a tear strength of 152g. The ream wrap of the prior art had a burst strength of 30 psi and a tear strength of 112g. (LM Declaration Paragraph 8).

It is the opinion of Ms. Mueller that a person of ordinary skill in the art of extrusion coating and development of industrial papers such as ream wrap would review the above test results and reach the conclusion that the ream wrap of the present invention differs significantly from the ream wrap of the prior art and constitutes a stronger ream wrap. (LM Declaration Paragraph 9).

Sample 1 attached to the Declaration is an example of the ream wrap of the present invention, as described by the test results. (LM Declaration Paragraph 10).

Sample 2 attached to the Declaration is an example of the ream wrap of the prior art as described by the test results. (LM Declaration Paragraph 11).

For the reasons stated above, claims 1, 5, 6, 10 and 12 are not anticipated nor obvious over Lacy.

The Examiner has rejected claims 1, 5, 6, 9 and 10 as being anticipated by Eberl (USPN 3,010,860). Eberl teaches a composite wrapping material comprising a paper base sheet with a basis weight of 16-32 lb ream weight, coated with an adherent hot melt wax coating and then covered with a synthetic resin sheet such as polyethylene or polypropylene wherein the wax is a refined paraffin wax or microcrystalline wax, i.e. polymer wax (Abstract; Col. 2 -Col. 3, line 12; Col. 3, lines 20-47.)

With respect to Eberl, the Applicant argues that the instant application does not require heating and blending of layer to produce the laminate, does not use wax coating, and is not used for food wrapping as taught by Eberl and that Eberl also teaches examples without paper. Further, the Examiner takes the position that the wax coating acts as an adhesive agent between the paper and the polymer layer and hence reads upon the limitation "adhesive layer". In terms of heating and blending, the Examiner notes that the instant invention does not exclude these process limitations wherein the resulting product taught by Eberl is the same as instantly claimed and further given that the final product taught by Eberl appears to be the same as the instantly claimed invention, it is irrelevant whether the product is utilized for wrapping foods or wrapping reams of paper, given that the instant claim limitation "for wrapping reams of paper" has not been given patentable weight because the recitation occurs in the preamble. Further, the Examiner takes the position that the limitation "for wrapping reams of paper" is intended use of the composite wrap material wherein a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.

Eberl requires that the polymer film layer and the wax layer be heated so that the layers commingle. This is necessary for Eberl to form the final product. The present invention has three separate layers, and because the polymer layer is solid it would never commingle with the adhesive layer. Further, Eberl describes that there is a commingling of the wax layer and the polymer layer, but that the wax layer is still a

separate layer, and therefore Eberl does not anticipate nor make obvious the amended claims of the present invention.

Ms. Mueller has reviewed the present invention and compared it to the prior art using a composite construction involving paper commingled with one or two layers of melted poly film. (LM Declaration Paragraph 6).

It is the opinion of Ms. Mueller which is borne out of the test results set forth in the Declaration, that the present invention, comprising a paper/ liquid poly/ solid poly film composite structure, has greater strength than the prior art comprising commingled paper/poly construction and that the present invention differs significantly from the prior art in these respects. (LM Declaration Paragraph 7).

The test results show that the present invention, the Sharkskin Ream Wrapper with 40# BL/ 10# LDPE/ 70 gauge film is stronger than and different from the prior art, namely a 40# BL/ 10# LDPE/ 7# LDPE. (LM Declaration Paragraph 8).

The ream wrap of the present invention had a burst strength of 62 psi and a tear strength of 152g. The ream wrap of the prior art had a burst strength of 30 psi and a tear strength of 112g. (LM Declaration Paragraph 8).

It is the opinion of Ms. Mueller that a person of ordinary skill in the art of extrusion coating and development of industrial papers such as ream wrap would review the above test results and reach the conclusion that the ream wrap of the present invention differs significantly from the ream wrap of the prior art and constitutes a stronger ream wrap. (LM Declaration Paragraph 9).

Sample 1 attached to the Declaration is an example of the ream wrap of the present invention, as described by the test results. (LM Declaration Paragraph 10).

Sample 2 attached to the Declaration is an example of the ream wrap of the prior art as described by the test results. (LM Declaration Paragraph 11).

For the reasons stated above, Claims 1, 5, 6, 9 and 10 are not anticipated nor obvious over Eberl.

The Examiner has rejected claims 1, 5, 6, 8 and 11 as being anticipated by Kitagawa (USPN 4,242,418). Kitagawa teaches a polyolefin-paper composition comprising a styrene-butadiene acrylic copolymer as an adhesive layer between the polyolefin layer and the paper substrate; wherein the polyolefin layer comprises polyethylene and may further comprise pigments and wherein Kitagawa teaches examples comprising a paper basis weight of 100 g/m² which reads upon about 60 lbs/3000 sq ft as instantly claimed (Abstract; Col. 5, lines 34-64; Col. 6, lines 7-33; Col. 7, line 63-Col. 8, line 27; Examples.)

With respect to Kitagawa, the Applicant argues that Kitagawa relates to light sensitive photographic papers, requires primer, and the plastic film layer is extruded in the molten form; however the Examiner notes that the instant invention does not exclude primers and the final product taught by Kitagawa is the same as the instant invention given that the limitation "said polymer film being solid" is a process limitation as discussed above and further the product is the same whether it relates to light sensitive photographic papers or wrapping reams of paper.

The amended claims require the exclusion of primers. Further, the use of a solid polymer film being applied to the paper creates a different product than a liquid or molten film. Therefore, the amended claims are not anticipated nor obvious over Kitagawa.

Ms. Mueller has reviewed the present invention and compared it to the prior art using a composite construction involving paper commingled with one or two layers of melted poly film. (LM Declaration Paragraph 6).

It is the opinion of Ms. Mueller which is borne out of the test results set forth in the Declaration, that the present invention, comprising a paper/ liquid poly/ solid poly film composite structure, has greater strength than the prior art comprising commingled paper/poly construction and that the present invention differs significantly from the prior art in these respects. (LM Declaration Paragraph 7).

The test results show that the present invention, the Sharkskin Ream Wrapper with 40# BL/ 10# LDPE/ 70 gauge film is stronger than and different from the prior art, namely a 40# BL/ 10# LDPE/ 7# LDPE. (LM Declaration Paragraph 8).

The ream wrap of the present invention had a burst strength of 62 psi and a tear strength of 152g. The ream wrap of the prior art had a burst strength of 30 psi and a tear strength of 112g. (LM Declaration Paragraph 8).

It is the opinion of Ms. Mueller that a person of ordinary skill in the art of extrusion coating and development of industrial papers such as ream wrap would review the above test results and reach the conclusion that the ream wrap of the present invention differs significantly from the ream wrap of the prior art and constitutes a stronger ream wrap. (LM Declaration Paragraph 9).

Sample 1 attached to the Declaration is an example of the ream wrap of the present invention, as described by the test results. (LM Declaration Paragraph 10).

Sample 2 attached to the Declaration is an example of the ream wrap of the prior art as described by the test results. (LM Declaration Paragraph 11).

For the reasons stated above, claims 1, 5, 6, 8 and 11 are not anticipated nor obvious over Kitagawa.

The Examiner has rejected claims 1, 5 and 6 as being anticipated by Knauf (USPN 5,250,348). Knauf teaches an improved wrapper paper for use in wrapping reams of paper wherein the wrapper comprises a base paper of about 30-about 60 lbs/3000 sq ft; a LDPE layer and wherein an optionally PEI layer can be applied to the paper web prior to application of the PE layer to enhance adherence of the PE to the paper web (Abstract; Col. 2, lines 64-67; Col. 3, lines 20-46; Col. 4, lines 21-47; Col. 8, lines 45-53; Figures.)

The Applicant argues that Knauf teaches that the polymer layer is extruded and hence not in the solid state upon lamination, however as discussed in detail above, the Examiner takes the position that the resulting product is the same.

Ms. Mueller has reviewed the present invention and compared it to the prior art using a composite construction involving paper commingled with one or two layers of melted poly film. (LM Declaration Paragraph 6).

It is the opinion of Ms. Mueller which is borne out of the test results set forth in the Declaration, that the present invention, comprising a paper/ liquid poly/ solid poly film composite structure, has greater strength than the prior art comprising commingled paper/poly construction and that the present invention differs significantly from the prior art in these respects. (LM Declaration Paragraph 7).

The test results show that the present invention, the Sharkskin Ream Wrapper with 40# BL/ 10# LDPE/ 70 gauge film is stronger than and different from the prior art, namely a 40# BL/ 10# LDPE/ 7# LDPE. (LM Declaration Paragraph 8).

The ream wrap of the present invention had a burst strength of 62 psi and a tear strength of 152g. The ream wrap of the prior art had a burst strength of 30 psi and a tear strength of 112g. (LM Declaration Paragraph 8).

It is the opinion of Ms. Mueller that a person of ordinary skill in the art of extrusion coating and development of industrial papers such as ream wrap would review the above test results and reach the conclusion that the ream wrap of the present invention differs significantly from the ream wrap of the prior art and constitutes a stronger ream wrap. (LM Declaration Paragraph 9).

Sample 1 attached to the Declaration is an example of the ream wrap of the present invention, as described by the test results. (LM Declaration Paragraph 10).

Sample 2 attached to the Declaration is an example of the ream wrap of the prior art as described by the test results. (LM Declaration Paragraph 11).

The use of a solid polymer film being applied to the paper creates a different product than a liquid or molten film. Therefore, the amended claims are not anticipated nor obvious over Knauf.

For the reasons stated above, claims 1, 5 and 6 are not anticipated nor obvious over Knauf.

The Examiner has rejected claims 1, 5, 6, 11 as being anticipated by Hirose (USPN 4,584,234). Hirose teaches a wrapping material comprising laminated layers of a paper support and at least one polyethylene resin layer superimposed on at least one surface of the paper support, and at least one layer of said wrapping material optionally comprising a light-shielding substance such as in the form of aluminum deposited on the surface of the paper (Abstract; Col. 4, lines 16-19; Figures.) Hirose teaches that an adhesive layer can be utilized between the paper support and the extruded polyethylene

layer to improve adhesiveness (Col. 4, lines 41-55.) Hirose further teaches an example utilizing a machined paper having a basis weight of 70 g/m² which falls within the instantly claimed range.

With respect to Hirose, the Applicant argues that the instant claims require that the product is used for wrapping reams of paper, require a solid plastic film layer laminated to paper, while arguing that Hirose requires light shielding material and involves extrusion lamination. Further, the Examiner states that the product taught by Hirose formed by extruding the polymer layer would result in the same product as instantly claimed given that the layer structure and materials are the same.

Ms. Mueller has reviewed the present invention and compared it to the prior art using a composite construction involving paper commingled with one or two layers of melted poly film. (LM Declaration Paragraph 6).

It is the opinion of Ms. Mueller which is borne out of the test results set forth in the Declaration, that the present invention, comprising a paper/ liquid poly/ solid poly film composite structure, has greater strength than the prior art comprising commingled paper/poly construction and that the present invention differs significantly from the prior art in these respects. (LM Declaration Paragraph 7).

The test results show that the present invention, the Sharkskin Ream Wrapper with 40# BL/ 10# LDPE/ 70 gauge film is stronger than and different from the prior art, namely a 40# BL/ 10# LDPE/ 7# LDPE. (LM Declaration Paragraph 8).

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It is the opinion of Ms. Mueller that a person of ordinary skill in the art of extrusion coating and development of industrial papers such as ream wrap would review the above test results and reach the conclusion that the ream wrap of the present invention differs significantly from the ream wrap of the prior art and constitutes a stronger ream wrap. (LM Declaration Paragraph 9).

Sample 1 attached to the Declaration is an example of the ream wrap of the present invention, as described by the test results. (LM Declaration Paragraph 10).

Sample 2 attached to the Declaration is an example of the ream wrap of the prior art as described by the test results. (LM Declaration Paragraph 11).

The amended claims require the exclusion of light shielding material. Further, the use of a solid polymer film being applied to the paper creates a different product than a liquid or molten film. Therefore, the amended claims are not anticipated nor obvious over Hirose.

For the reasons stated above, claims 1, 5, 6 and 11 are not anticipated nor obvious over Hirose.

The Examiner has rejected claims 1, 5, 6, and 8-11 as being obvious over Hyde (USPN 2,582,037) in view of Eberl. Hyde teaches a wax coated wrapping paper comprising a paper base with a wrapping weight of 15-150 lbs/ream (3000 sq ft), preferably 20-35 lbs/ream, and a polyethylene wax blend coating applied to the paper base (Abstract; Columns 2-3.) Hyde does not teach polyethylene film applied over the wax coating, however, Eberl teaches that by providing a thermoplastic film such as a polyethylene film over the wax coating and heating to adhere the film to the wax provides improved physical properties to the composite paper wrapping product over wax coated papers (Col. 1, lines 40-56; Col. 3, lines 48-63.) Therefore, one having

ordinary skill would have been motivated to apply a polyethylene or other compatible thermoplastic film as taught by Eberl over the waxed paper substrate taught by Hyde to provide improved physical and mechanical properties to the paper composite. Further, it would have been obvious to provide desired pigments in any of the composite layer to provide a desired color based on a particular end use of the composite.

Ms. Mueller has reviewed the present invention and compared it to the prior art using a composite construction involving paper commingled with one or two layers of melted poly film. (LM Declaration Paragraph 6).

It is the opinion of Ms. Mueller which is borne out of the test results set forth in the Declaration, that the present invention, comprising a paper/ liquid poly/ solid poly film composite structure, has greater strength than the prior art comprising commingled paper/poly construction and that the present invention differs significantly from the prior art in these respects. (LM Declaration Paragraph 7).

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Sample 2 attached to the Declaration is an example of the ream wrap of the prior art as described by the test results. (LM Declaration Paragraph 11).

The use of a solid polymer film being applied to the paper creates a different product than a liquid or molten film. Therefore, the amended claims are not anticipated nor obvious over Hyde in view of Eberl.

For the reasons stated above, claims 1, 5, 6 and 8-11 are not anticipated nor obvious over Hyde in view of Eberl.

Applicant believes that the application is now in condition for allowance.

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